

# TRU TeamWorks

A weekly e-newsletter for the Waste Isolation Pilot Plant team

January 8, 2004

## The Big Story

### NTS shipment opens I-40 corridor

A new transportation corridor is open for WIPP, marking another important milestone in the project's clean-up mission. The long-anticipated first shipment of TRU waste from the Nevada Test Site (NTS) marks the opening of a transportation corridor that runs east along I-40 from California through Arizona to New Mexico. NTS shipments enter New Mexico at Gallup and continue on I-40 to Clines Corners. Drivers then proceed south at Clines Corners turning onto U.S. Route 285.



The initial NTS shipment departed Wednesday and is currently en route and scheduled to arrive at the WIPP site late today (Thursday). "The first waste shipment from a site is always exciting," comments, Joe Franco, CCP NTS and Hanford project manager. "First shipments are strong reminders of the progress we are making in our nationwide clean-up effort and the hard work our personnel continue to do to keep this program on the move."

The NTS waste en route to WIPP was characterized and approved for shipment by CCP personnel last year. NTS shipments planned for 2003 were delayed pending route approval between DOE and the states of Nevada and California. NTS has approximately six more payloads ready for shipment to WIPP that will follow later this month.

DOE and the states of Nevada and California agreed to allow up to 60 shipments of waste to travel the I-40 corridor to WIPP. Beyond that, no further NTS shipments have been scheduled. Check *TRU TeamWorks* for future developments in NTS shipment schedules.



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#### Feedback

Contact us with feedback or submit your e-mail address for updates. Click [here](#) to e-mail.

WIPP Shipments  
 (as of 1/8/04  
 at 11:24 a.m.)

Shipments scheduled  
 to arrive at WIPP  
 this week  
 20

Total shipments  
 received at WIPP  
 2247



*A TRU waste shipment similar to this one is on its way from NTS to WIPP.*

#### In the news



MLU in action



Innovation at its finest



WIPP-disposed waste



Work environment



LWA drives WIPP



Our Team News



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**MLU teams in action**

The Mobile Loading Unit (MLU) team led by LANL/CB uses standardized procedures and portable equipment to safely and cost-effectively certify, load and ship TRU waste to WIPP on a routine basis. The team is currently on assignment at the Nevada Test Site.

The MLU team is particularly suited to operate at small quantity sites that have small TRU waste inventories and little or no infrastructure to certify and load waste for shipment. MLU operations are so portable that the crew has even operated in parking lots. According to Wade Weyerman, MLU team leader, the MLU team often loads the waste in parking lots, but one at the Missouri University Research Reactor was somewhat unusual. "The university environment is so different from that of a DOE site, and even though people who work around the reactor are familiar with nuclear operations, we felt a little out of place."

The photos below provide a sampling of the capabilities offered by MLU teams at DOE sites across the nation. "Not only do MLU team members provide excellent work in some less than optimal situations, but make tremendous personal sacrifices to do this very important job," comments Bryan Howard, LANL/CB CCP Support manager. "They are often away from their homes and families for weeks at a time. I am very proud of their accomplishments and thankful for the sacrifices they make for this project."

Current MLU team members are Wade Weyerman, Jim Bailey, Kevin McTaggart, and Mike Sensibaugh of LANL/CB and WTS employee Alfred Hinojos. For a complete rundown on the MLU team, see the August 14, 2003 issue of *TRU TeamWorks*.



**Wade Weyerman, MLU team leader, guides the forklift operator during loading operations at Argonne National Laboratory – East.**



**An MLU team member guides a 14-pack of waste drums into a TRUPACT-II at the Missouri University Research Reactor facility.**



**Mobile loading at the Savannah River Site was completed inside a building.**

**Photos courtesy of Mike Sensibaugh, LANL/CB.**



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## WIPP Shipments

(as of 1/8/04 at 11:24 a.m.)

Shipments scheduled to arrive at WIPP this week 20
Total shipments received at WIPP 2,247
Total Waste Disposed Underground at WIPP
CH drums 47,390
CH standard waste boxes 2,366
CH ten-drum overpacks 590
Cubic meters 17,055

## Tighten' up

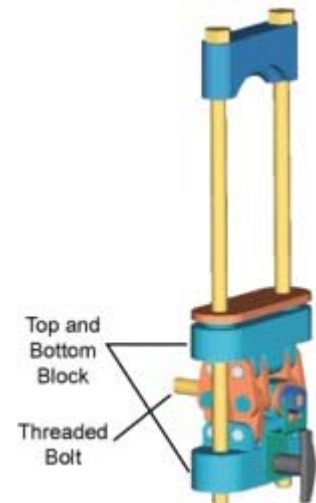
Innovation is a byword at WIPP. Processes and equipment are continually scrutinized and refined. An example is the tie-down used to secure the TRUPACT-II shipping cask to its trailer. Engineers noted limitations with existing tie-downs: they were not wearing as well as expected.

The original tie-down design (top right) uses an 11-inch U-bolt that fits over a tiedown lug at the base of the TRUPACT-II. Once a TRUPACT-II is loaded onto the trailer, the tie-down is tightened until proper torque is achieved – determined by a .07 inch thick steel gauge that fits between the compression block and the compression plate. In WIPP lingo, the instrument is referred to as the “go/no-go gauge.”

Todd Allen, WTS senior packaging engineer, designed the new Screwjack tie-down (middle right) that is much easier to operate and more durable. The Screwjack tie-down consists of a top and bottom block, spread apart by a threaded bolt. The older U-bolt design will be replaced by two Grade 8 steel bolts. Like the older tie-down, the Screwjack tie-down can be tightened to meet the “go/no-go gauge” requirement. The primary advantage of the Screwjack tie-down is that load pressure is applied equally on two separate bolts at the same time without stressing the bolt threads.

The new tie-downs were field tested on TRUPACT-IIs transported between the site and Washington Engineered Products Department in Carlsbad for maintenance. After successful testing, an initial order was placed for 500 of the new tie-downs. Carriaga Machine, a local firm, will fabricate the tie-downs and expects to deliver the first 28 next month – enough to outfit two trailers. Engineers say it will take approximately six months to phase out the older tie-downs.

CBFO Transportation Packaging Manager Mike Brown welcomes the innovation, “These new tie-downs are more durable, easier to operate and offer substantial cost savings as well.”





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## Total Waste Disposed Underground at WIPP

(as of 1/8/04  
at 11:24 a.m.)

CH drums  
47,390

CH standard  
waste boxes  
2,336

CH ten-drum  
overpacks  
590

Cubic meters  
17,055

## Evolution of WIPP-disposed waste

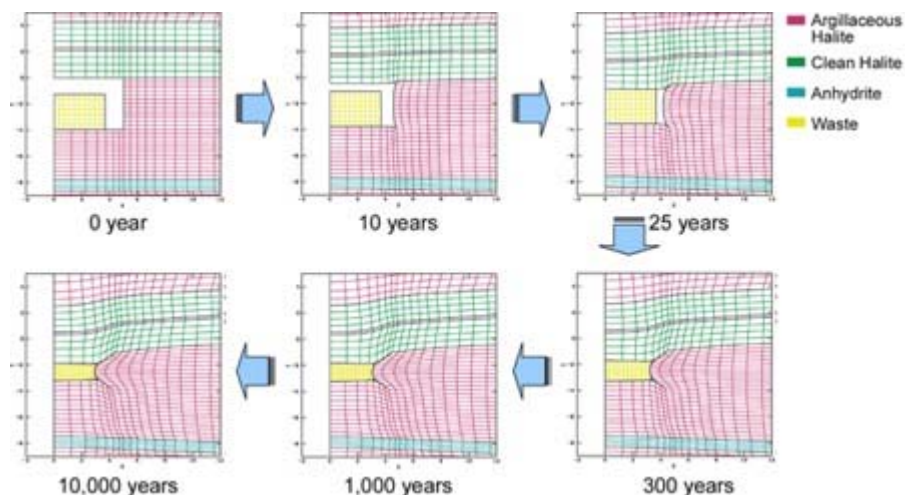
People often ask: What happens to the waste itself after it is placed in the WIPP disposal rooms? The photograph below shows actual waste emplacement in Panel 1. Typically, the waste packages are stacked three-high and a super-sack of magnesium oxide (MgO) is placed on top of the waste stack. The MgO provides an engineered barrier – required by regulations. There is an approximate two-foot void between super sack and ceiling.



"There are several reasons that salt is considered an ideal medium to isolate wastes, such as its impermeability and plastic deformation—called creep," says Frank Hansen of Sandia National Laboratories.

"Creep of WIPP salt has been studied from the very beginning of the project, and many of the attendant salt characteristics such as the disturbed rock zone and permeability continue to be researched today."

The figures below illustrate creep closure and compression of the waste. Creeping salt will impinge upon the waste in approximately 10 to 20 years. Over time, the salt will compress and consolidate the waste stacks and entomb the waste.



Room Closure and Compression of the Waste over the Regulatory Period.

## Managing people in a changing work environment - Part II



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A training seminar designed to effectively manage employees to work safely in a changing work environment was highlighted in the November 20 edition of *TRU TeamWorks*. Managers and several lead professionals from WTS, along with partner organizations WRES and L&M participated. The seminar resulted in a compilation of information received from the participants themselves.

This compilation revealed a powerful story about commitment to the evolution of our safety culture. It also reinforced the need to manage the process of change and the importance of ensuring that employees have the best leadership possible.

Three key issues were identified during the seminar:

- Elements that define “change” and how those elements can be managed to improve safety.
- Expected result of the training effort: “Affect employees to work safely in a changing work environment.”
- Abilities and attributes that managers must develop and refine to ensure effective safety management and general leadership.



The seminar's interactive process enabled participants to identify and describe the elements that define “change” in WIPP's unique environment. Participants identified “general resistance to change” as a common issue affecting a manager's ability to guide employees in a changing work environment.

Participants agreed that frequent communication of the right information to the right people at the right time, assumption of responsibility and accountability for safety, and effective leadership were needed. There was consensus that the ability to communicate vertically, horizontally and globally was essential to working safely.

The seminar brought managing the process of change into focus with emphasis on the cultural impact of managers' words and actions. Through seminar training and feedback, leadership at WIPP made a significant investment in the project's continued success and employee safety.

If interested in additional information about the seminar and/or the executive summary, contact Tom Fabian at Extension 8456.

Know your drivers:

First in a Series

WIPP Land Withdrawal Act



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Organizations that excel maintain a consistent focus on their “drivers,” key standards and regulations that govern operational success. WIPP and the National TRU Program (NTP) are no exception.

We all need to know - in detail - the regulatory and administrative standards that drive WIPP operations, including public laws, Department of Energy orders, regulatory requirements and associated procedures. The first topic in our continuing series is the WIPP Land Withdrawal Act (LWA), Public Law (PL) 102-579, passed by Congress on October 30, 1992. The LWA is the fundamental driver for our project.

Test your knowledge of the LWA with Part 1 of the quiz below. The LWA is at the link: <http://www.emnrd.state.nm.us/wipp/lwa.htm>. Answers will be published in the next issue of *TRU TeamWorks* with Part 2 of the LWA quiz.

1. What is the capacity limit of the WIPP underground storage, assigned by the LWA?
  - a. 5.2 million cubic feet
  - b. 6.2 million cubic feet
  - c. 7.2 million cubic feet
2. What legal authorization initially established WIPP under Section 213 of PL 96-164?
  - a. Department of Energy National Security and Military Applications of Nuclear Energy Authorization Act of 1980
  - b. Supplemental Stipulated Agreement Resolving Certain State Off-Site Concerns Over WIPP of 1982
  - c. Comprehensive Environmental Response, Compensation, and Liability Act of 1980
3. The LWA excludes transuranic mixed waste from which provision of the Solid Waste Disposal Act?
  - a. Land disposal restrictions
  - b. Temporary storage permits
  - c. Transportation regulations
4. Disposal of “salt tailings” from the WIPP mine is prohibited under the LWA.
 

True                  False
5. The LWA cites the mission of WIPP, from the original authorization, as:
  - a. To demonstrate the safe disposal of radioactive waste materials generated by atomic energy defense activities.
  - b. To test the safe disposal of radioactive waste generated by the defense nuclear weapons complex.
  - c. To demonstrate the safe disposal of low-level waste generated by production of nuclear weapons materials.
6. The LWA required the DOE to study and compare truck versus rail transportation of TRU waste shipments to WIPP.
 

True                  False

## Announcements



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### "Read and Sign"

Effective January 2004, the WIPP Radiation Worker Refresher Training will be changed from a full requalification each year to "Read and Sign" training on the off-year. A full requalification will only be required every two years consistent with federal and state requirements. This is also consistent with practices at other DOE facilities.

Since all currently qualified WIPP radiation workers have received full qualification in 2003, the "Read and Sign" Refresher Training will satisfy 2004 requirements. Each student must read the text and return the completed form to WTS Technical Training to document program completion. A full program requalification will again be required in 2005.

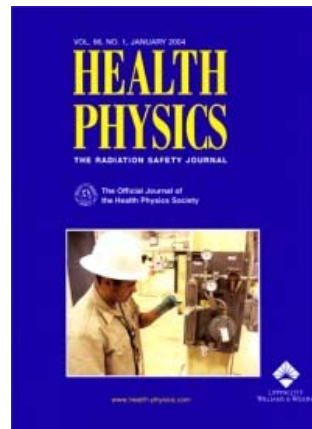
To obtain the "Read and Sign" Refresher Training material, contact Mary Ann Murillo at Extension 8646. If you have any questions about this change, contact one of the following:

Don Harward	David Chavez	Steve Gallagher
<b>Manager, Radiation Safety and Emergency Management</b> Extension 8285	<b>Manager, Technical Training</b> Extension 8235	<b>Training Specialist</b> Extension 8042

### HP Journal Features WIPP

The January 2004 issue of *Health Physics - The Radiation Safety Journal* - features an Operational Topic entitled "Curve Fitting Air Sample Filter Decay Curves to Estimate Transuranic Content" written by WTS employees Robert B. Hayes and Hung Cheng Chiou. The photo on the cover was taken by WTS employee Alan Rostro.

***The cover: A WIPP radiological control technician replaces the filter on a fixed air sampler. See article by Robert B. Hayes and Hung Cheng Chiou on page 80 for more information.***



### Note of appreciation

Dear Subhash,

***I wanted to take a moment to thank you for taking the time out of your busy schedule to provide me with a tour of your most impressive facility. I truly enjoyed the tour and am still in awe of the magnitude of responsibility you all have accepted. My trip is something I will always remember. I also want to express my appreciation for the commitment you have for the health and safety of the employees at WIPP. Being in the elite of VPP operations is truly commendable and I wish you continued success in your efforts. Thank you again.***

***Dave D. Lauriski, Assistant Secretary of Labor for Mine Safety and Health***

